

## **Abstract**

The present invention relates to an online monitoring method and device for a fossil fuel converter apparatus and pertains to the technical field for monitoring online fuel property and efficiency of power stations. The method monitors fuel compositions in real time by measuring operating data of the converter apparatus and comprises the following steps: determining reactant compositions and number of variables thereof; determining fuel compositions and number of variables thereof; determining compositions of incomplete products and number of variables thereof; determining relationship between the fuel compositions and calorific value; establishing an equation set involving the fuel compositions, the reactant compositions and the resultants compositions, according to energy balance relationship and material balance relationship in the combustion process; providing given conditions for independent relationships concerning variables in the above equation set; measuring boiler operating data and assigning the variables in the above equation set, wherein the sum of the number of the assigned variables and the number of the above given conditions are equal to the sum of the number of variables of the reactant compositions, number of variables of fuel compositions and number of variables of incomplete products compositions, so as to achieve a positive definite condition of the equation set; and finding the solution to the equation set and obtaining real-time monitoring data of the converter apparatus.